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## INSTALLING AN ERP SYSTEM WITH A METHODOLOGY BASED ON THE PRINCIPLES OF GOAL DIRECTED PROJECT MANAGEMENT

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### ABSTRACT

This paper describes a generic methodology to support the process of modelling, adaptation and implementation (MAI) of Enterprise Resource Planning Systems (ERPS) based on the principles of goal directed project management (GDPM). The proposed methodology guides the project manager through specific stages in order to successfully complete the ERPS implementation. The development of the proper MAI methodology is deemed necessary because it will simplify the installation process of ERPS. The goal directed project management method was chosen since it provides a way of focusing all changes towards a predetermined goal. The main stages of the methodology are the promotion and preparation steps, the proposal, the contract, the implementation and the completion. The methodology was applied as a pilot application by a major ERPS development company. Important benefits were the easy and effective guidance for all installation and analysis stages, the faster installation for the ERPS and the control and cost reduction for the installation, in terms of time, manpower, technological equipment and other resources.

**Keywords:** implementation methodology, resource planning system, management information system, enterprise resource planning, goal directed project management, ERP

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## 1. INTRODUCTION - BASIC METHODOLOGY STAGES

The Enterprise Resource Planning Systems (ERPS) are used for managing operational resources. ERPS help in the integration and automation of the operational processes, based on the information model of the enterprise. Such systems constitute, for the entirety of the corporation, information systems which integrate basic business functions in such a manner, so that information can flow freely through various business departments of the corporation (Soh et al, 2000).

An ERP system collects information from various basic business processes and stores the data in a database, which is accessible to other departments of the corporation. Thus, the users can receive much more accurate and up-to-date information, allowing them to guide every day business functions in a much more efficient manner while allowing for an in-depth perception of both business functions and the flow of information (Meredith et al., 1995). The broader units (modules) that an ERP system aims to cover are:

- Financial management (FIN) that includes: capital management, cost analysis, credit / debit, proper funds, accountant books, cost accounting, control system, payroll, personnel expenses
- Sales management (SAL) that includes: sales management, sales planning, customers – suppliers management
- Production (PRO) that includes: production organization, production management and qualitative control
- Warehouse management (WAR) that includes: inventory measurement, inventory management, storage
- Transportation (TRA) that includes: transportation management, transportation planning, logistics

The installation process for an ERP is a very time-intensive and difficult process, given the boundaries between departments and functions within a corporation. The difficulty and sensitivity of the process stems both from the complexity of its form and the nature of the coding required for the ERPS, as well as the fact that its installation and operation requires in its inception the modeling and adjustment of pre-existing systems and business functions of the corporation (Markus et al., 2000).

This work is an important investment of time and resources for the enterprise. Therefore, in order to assure the best exploitation and utilization of the advantages of the ERP system from the client-companies, the fast and successful installation of the ERP is considered of particular great importance.

Internationally, the examples show remarkable successes in the installations and adaptations of ERP systems since many companies that adopted ERP systems have managed to remarkably raise their productivity. However, in many cases there were tragic failures due to the fact that such systems are characterized by exceptionally

complex and risky installations.

It is for this reason, that the development of the proper MAI methodology and relevant application is deemed necessary, which will simplify the installation process of ERPS, and which will act both as a guide for the consultant who will be implementing the installation, as well as a channel of communication between the project manager and the consultants (Davenport, 2000).

The core of this methodology is based on the principles of goal directed project management (Anderson et al., 1999). A common identifier of most contemporary organizational changes is that they tend to tear down the boundaries between disciplines of different departments or even corporations, a fact which entails major and radical restructuring. The goal directed project management method was chosen as a predominant method and philosophy of the methodology used in project management, since it provides a way of focusing all changes towards a predetermined goal (Meredith et al., 1995).

The analysis and the developed methodology for managing the implementation of an ERP installation will be presented in a structured way as following:

- per stage of the implementation project
- per management level
- per management field

The methodology is developed with the following goals in mind:

- To reinforce in the mind of the team leader for the Project installation the three basic goals, which are to deliver the project **on Time**, **within Budget** and to achieve **Customer satisfaction**.
- To make the application easy and with minimum requirements in manpower (Requirements for usual projects should be no greater than a man-month and should be the equivalent of approximately 10% of the overall effort required for full project implementation).
- To provide a standard for quality assurance and normalization for control and implementation process, starting during the Sales phase and reaching to the Project Implementation phase.
- To provide the necessary tools (i.e., doc, xls, mpp) for the Project Manager for the Administration, Technical Execution and Fiscal Overview of the project.
- To adjust to the particular needs of each project.

Analytically, the categories of the members that are involved in the implementation of the ERP installation are the following:

- Head of ERPS provider and Head of Client

They are the high executives of management that are responsible for the success of the work of installation. They represent their companies in the meetings of the guidance committee in order to handle subjects and face problems or matters which are not assigned to the Project Manager, such as basic divergences or acceptances of

financial or other factors of actions. The guidance committee reports to the basic shareholders and sponsors (see figure 4, Communication diagram).

- Project Manager

They are responsible for the project to be delivered on time, within the limits of available budget and maintaining customer satisfaction. The project managers:

- create the project plan and coordinate the team of implementation
- face the obstacles and the difficulties that are met during the installation
- organize the delivery and the acceptance of the deliverables
- ensure the proper communication between the team and the companies
- manage the financial matters according to the contract

- Consultants and senior consultants for each unit

Their aim is the optimization of the parameterization of the ERP system based on the customer's needs, the integration of units and their interconnection, the execution of the control processes and the training of the main users (key users).

From customer point of view and for each department:

- Decision makers

They have a vast knowledge of their department processes and the way that these are interconnected to the processes of other departments. With the help of the key users they analyze the requirements of the department and present them to the consultants. They estimate the proposed solutions, decide for the most optimal ones and are responsible for its acceptance concerning the department they represent.

- Key Users

They also know the processes of the department and, in collaboration with the consultants, analyze and check the proposed solutions through relative control mechanisms and propose the most suitable ones to the decision maker. They are trained on the use of the ERP system and participate in its parameterization and the preparation of the deliverables. They manage the import of data and train the end users.

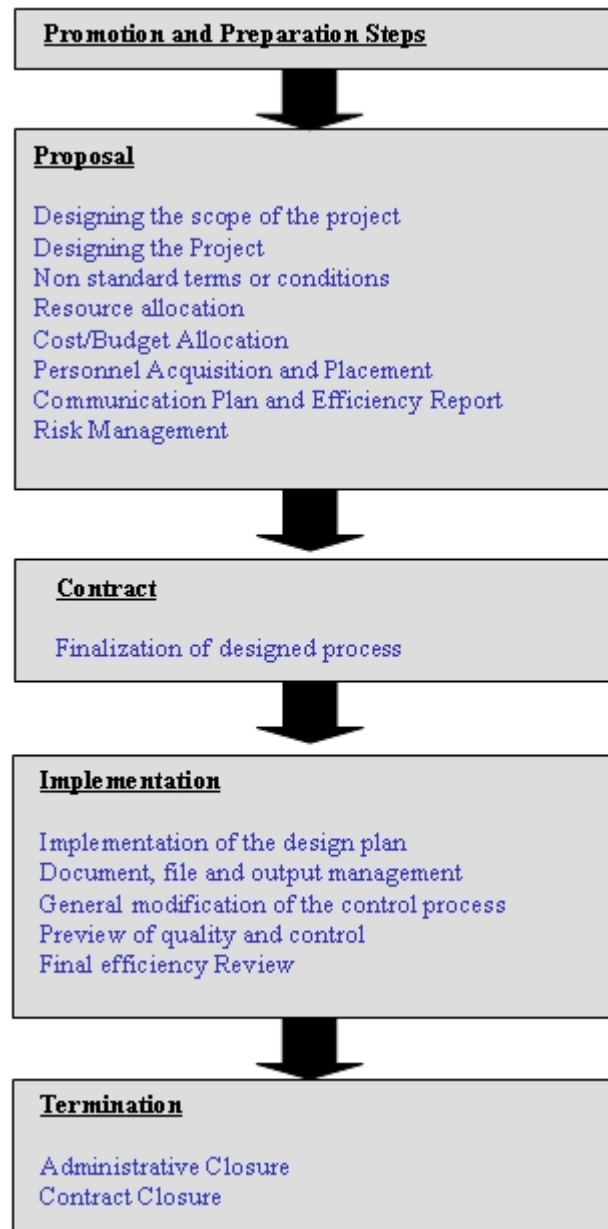
- Administrator

They manage subjects concerning technical equipment, network and database of the client-company (lack of software, lack of network needs that stem from the ERPS installation, and also changes to the database in order to fully adopt the ERPS to customized client-company specific needs)

The methodology aims to provide the project manager with the capability to create all the necessary data for the proper management and implementation of the project and to guide the consultants during the implementation of projects of analysis and modeling of corporate operations and installation of enterprise resources systems (ERPS).

The following figure (flow chart) illustrates the main stages proposed by the present implementation methodology of a complete ERP installation. The first stage of

promotion and steps of preparation (pre-sales) have been presented for reasons of continuity and simply include actions that precede the whole installation process.



**Figure 1:** MAI methodology stages

## **1.1 Proposal**

### **1.1.1 Design and definition of the scope of activities**

The result of the design of the scope of activities is the formal and in-depth

definition of this scope in the form of a report.

The questions that are suggested by the current methodology, for the creation of such a report, are the following (Bruges, 2000):

1. What is the condition of the client corporation?

The first step is in fact the analysis of the current situation and of the client - company environment. It includes an analytical review of the organisational structure, the current software, the infrastructure and the natural environment, the IT - organisation (existence of responsible departments, proper utilization of the software technology from employees, support, etc.) and its staffing.

2. What are the reasons for the ERPS installation?

In this particular step, the problems that the client - company faces from the lack of an ERPS are located and analyzed (non-existent or incomplete inventory control, problematic financial management, ineffective production methods etc.)

3. What are the objective goals of the project?

The benefits that the client-company will gain by installing the ERP system are located and analyzed (business reorganisation, optimisation of the client-company operation, processes automation etc.) and is directly connected to the problems that were mentioned in the previous step.

4. What modules of the ERPS will be installed in the client corporation?

There will be a specific selection of the units-modules of the ERP (FIN, SAL, PRO, WAR, TRA) that will be installed in the company since it is most likely that the client-company will not make use of all of the ERP units.

5. What are the basic tasks required for the installation to be completed?

In this step, a short summary of the description of the service and also the necessary tasks for a successful installation are provided. The sequence and also the content of the tasks will be given in a following step of the methodology.

6. Are there exceptions based on the structure of the client corporation, its size and the number of available personnel?

It is highly possible that new staffing requirements might come up; changes to the company structure may be necessary by abolishing specific departments or creating new ones, in order for the company to fully adopt the new demands created by the ERP system.

7. The job description of each of the personnel assigned to the project both on the side of the supplier corporation as well as on the client corporation.

It includes the responsibilities that are specified based on the role of each one in the project of the ERP installation and are analyzed in a following step of this methodology.

8. What is the Contractual basis of the agreement undertaken between the corporation supplying the ERPS and the client corporation?

It is the nature of the ERP systems that demands for the contract to include in a very specific and analytical way the modules to be installed, the roles, the responsibilities and the tasks duration and time limits. It is obvious, that in this stage what is agreed is the basis of the contract and not the complete document.

9. Acceptance of the processes and the criteria.

### ***1.1.2 Project Planning***

The project framework must be structured in installation modules for the ERPS as well as per phase (start-up, analysis, implementation and completion). It is for this reason that during the planning stage, the tasks which are to be implemented are defined. Each module includes predetermined tasks which are added to the task list for the project. Then, the tasks that are necessary for the specific project are defined, as well as the project task list which gives a schematic representation of the tasks that must be completed during project implementation, per module and phase (Cleland, 1994).

Specifically, project leaders set up the implementation team and decide on a project manager who is in charge of formulating all the necessary elements for the smooth administration and implementation of the project. The creation of a new project has the form of a checklist, so that the manager can use it as a guide via this automated process.

**Stage 1:** The project manager creates a new project on the system, by inputting the basic data: project client, project title (if it exists), the ERPS modules to be installed, business type of the client, the start-up date, the expected completion date for the project as well as the expected duration, the number of consultants working on the projects, and possibly some comments about the project.

**Stage 2:** The project manager selects consultants from a chart of available consultants, granting them access privileges to the project data.

**Stage 3:** The project manager prepares the Project Task List. The task list for a project is based on predefined tasks, which have to be:

- module based: each module of the ERPS require specific tasks
- time phased: an ERPS installation project is divided into phases. Each task is part of a specific phase of the project.

The phases of the methodology and the predefined tasks per phase (as set in the organisation chart and communication plan) are the following:

<b>Start-up Phase</b>	Creating Project Diagram
<b>Analysis Phase</b>	Design Requirements
<b>Implementation Phase</b>	Application organization
	Data Storage Management
	Receipt documents for goods
	Transfer of the accounting plan
	Business partners
	Clients
	Suppliers
	Supply management
	Sales & distribution
	Sales force & agents management
	Price lists
	Pricing
	Securities
	Fiscal/Financial documents
	General & detailed accounting
	Document Transfers
	Account transfers
	Fixed Assets Management
	Warehouse logistics- geography
	Warehouse logistics- management
	Warehouse logistics- connection to retail
	Wireless Management
	3rd party logistics
	Manufacture process management
	Connection of manufacture process to warehouses – logistics
<b>Project Rollout Stage</b>	Training
	Physical inventory

**Table 1:** Methodology tasks per phase

More details about the goal, the deliverables (if present), supplementary forms &



tools (if required), the milestones for each task, the actions required on the part of the client as well as possible risks for each task can be seen in Appendix A - "Suggested Tasks per Phase". Moreover, in Appendix B - "Time Scheduling for Suggested Tasks" the start-up and completion times for tasks, their duration and their dependence are shown (Anderson et al., 1995).

**Stage<sup>o</sup>:** The manager prepares the resource allocation sheet for the project. This sheet is based on an Excel template. The project manager modifies the document of the file by filling in the estimated times and creates the resource allocation sheet. This shape is described in detail in the relevant module («Planning for the resources, equipment and supplies»).

**Stage<sup>o</sup>:** In this Stage the manager can set up the templates for the deliverables, status updates, reports and all general documents which will be required for the project.

### *1.1.3 Non standard terms or conditions*

Since the overall project structure is based on standardized processes and processes, each deviation must be mapped and reported. It is a given that in ERPS installation projects there will be deviations relating to the differing fields of the client corporations, different structures, functions etc.

### *1.1.4 Resource Allocation*

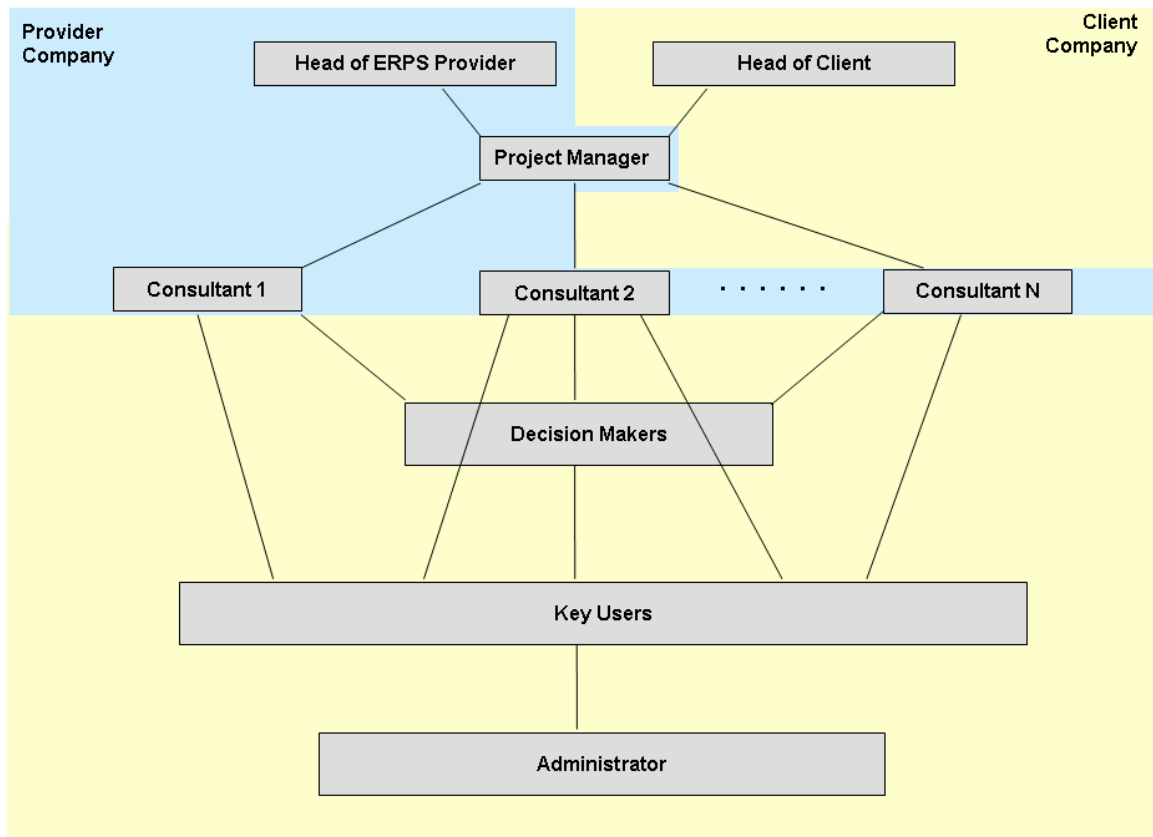
Resource allocation, which follows project planning, is structured in such a manner as to identify project needs, to highlight the necessary processes that are required, to allocate the required resources, to manage and create them (all by the project manager). This planning should include human resources management, the organizational chart, as well as planning for the resources, equipment and supplies. Resource allocation is mainly achieved via the creation of a report on the resource distribution within the project (Laudon, 2000).

### *Human Resources Management*

The types of personnel required for an ERPS installation project, have the following job descriptions: Head of ERPS provider and head of client, Project Manager, Consultants and senior consultants for each unit. On the part of the client and for each section, the job descriptions include *the* decision makers, the key users and the administrator. The role of each type of personnel was described analytically in the previous paragraph.

### *Organizational Structure*

After the Project Manager determines the human resources required for the project and assigns the roles- jurisdictions, he/she must define their inter-dependence. The organisation chart for the installation of an ERPS project suggested by the present methodology is as follows:



**Figure 2:** Organisation chart

### Planning for the resources, equipment and supplies

Includes:

- Determining the basic supplies required for each task for the installation (software, equipment, installation room in the client company etc).
- Defines the type, numbers and the technical characteristics of the resources which are required and relate to the project, as well as the basic users and administrators.
- Defines the technical standards in case technical equipment is required.

The report on the resource allocation for an ERPS installation project describes the estimated man-years per task and the roles of the project team. The project manager uses a basic excel template and changes the data, by completing the estimated times, thus creating the resource allocation report.

## Installing an ERP system with a methodology based on the principles of goal directed project 367 management

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
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5																												
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7	phase:	IMPLEMENTATION																										
8	start date:																											
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12	ΦΑΣΗ ΕΚΚΙΝΗΣΗΣ ΕΡΓΟΥ																											
13	ΟΡΓΑΝΩΣΗ ΚΑΙ ΣΤΕΛΕΧΩΣΗ ΕΡΓΟΥ (PROJECT ROOM, ΕΞΟΠΛΙΣΜΟΣ, ΟΜΑΔΕΣ, ΡΟΛΟΙ ΚΑΙ ΑΝΤΙΚΕΙΜΕΝΟ ΕΥΘΥΝΗΣ)																											
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37	ΠΡ. ΠΡΟΣΔΙΩΡΙΣΗΣ ΠΑΡΑΛΑΒΗΣ ΥΠΟΕΥΣΤΗΜΑΤΟΣ ΠΡΟΜΗΘΕΙΩΝ																											
38	ΠΛΗΡΗΦΩΡ & ΑΝΑΝΟΜΕΤ																											

Figure 3: Resource Allocation Report

### 1.1.5 Cost-budget evaluation

With the aim being to find the most cost efficient method for completing the installation of the ERPS, the project manager, working in tandem with the financial department of the company supplying the ERPS, must submit a budget for any equipment required, as well as licences, software, technical support, expenses and various other items. Special care must be taken in regard to the cost, the mark up, the sales price and the possible hiring of additional personnel. Such hiring practices aim at creating the necessary human resources (single persons or groups) which will be put to work on the project. In many cases, the proper resources might not be available, in which case the management team of the project must find resources which are available and can meet the demands of the project.

Finding the necessary personnel is done in cooperation with the Human Resources Departments of the supplier corporation and the client corporation. The persons or groups chosen can be members of the corporations, with an interest in the project, or external associates.

### 1.1.6 Acquiring and Assigning Personnel

In this stage, the possible acquisition of personnel is examined. Such hiring practices aim at creating the necessary human resources (single persons or groups) which will be put to work on the project. In many cases, the proper resources might not be available, in which case the management team of the project must find resources which are available and can meet the demands of the project.

Finding the necessary personnel is done in cooperation with the Human Resource Departments of the supplier corporation and the client corporation. The persons or groups chosen can be members of the corporations with an interest in the project or external associates.

### *1.1.7 Communication plan and performance reporting*

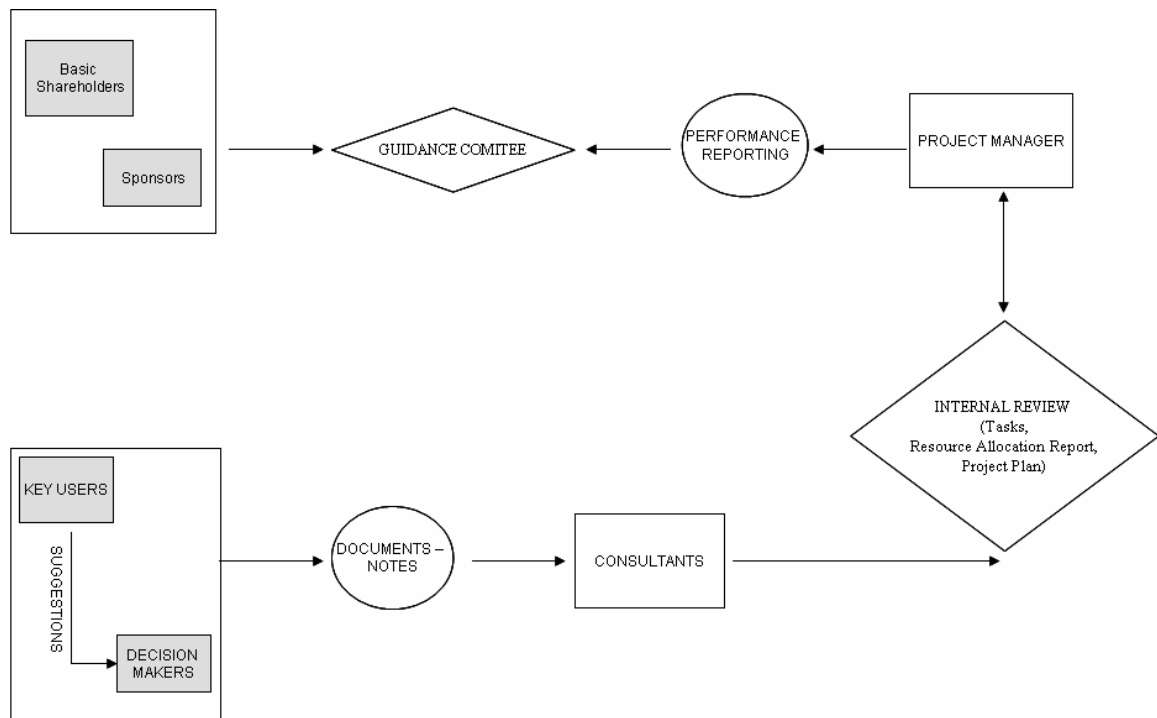
The communication plan for a project for installing an ERPS must include:

- A concentrated and ordered structure for analyzing methods, which will be used in order to collect and store various types of information. The process must include the concentration and propagation of upgrades and improvements on the already existing material.
- A structure for Data distribution, which must be based on the flow of information, will be employed in order to determine which methods will be used in order to distribute various types of information. This structure must be compatible with the jurisdictions and aforementioned relations, as they have been set down in the organisation chart of the project.
- A description of the information which will be distributed, including the shape, content, level of detail and the compatibility/clarity which will be used.
- A communication diagram, which will show the type of communication, will be created.

The present methodology, suggests the use of performance reporting, as a basic tool for storage and transmission of information.

Performance reporting aims to collect and classify information associated with performance, in order to give to the shareholders the necessary information which is related to the aim of the project. This process includes:

- Situation Report –describes the current status of the project (the stage the process is in, the personnel employed in the present phase etc)
- Progress Report – describes the actions undertaken by the project team (how many tasks have been completed by the consultants, associating tasks with the time schedule, possible deviations and their causes etc)
- Prediction – predicts future conditions and the project progress



**Figure 4:** Communication diagram

Main elements of the communication diagram include:

- Guidance committee – the project manager presents to the sponsors and the basic shareholders the current project status, the required decisions and the gradual solution of problems.
- Performance reporting – To be distributed by the project manager to all the major shareholders and department head.
- Internal review – Project review by the project manager.

### **1.1.8 Risk Management**

Risk management is a practice concerning the processes, methods and tools used to mitigate the dangers of a project. It provides for a structured environment in which dynamic decision making is possible, based on (Xu et al., 2002):

- Constant evaluation of what could go wrong (risks)
- Defining the risks being examined
- Coming up with strategies for dealing with said risks

The suggested methodology uses of a method of risk management based on 5 distinct stages:

**Stage 1:** Determining the framework. Initially, the project manager is required to determine the framework and criteria for risk management. This stage is crucial, in order to insure the full comprehension of the responsibilities and responsibilities in every level of the project, as well as in the organization overall, which leads to understanding the utility of the framework for action set forth by this method (Wright et al., 2006).

**Stage 2:** Risk assessment. In order to achieve this, a questionnaire must be created (questions and possible answers). The responsibility for answering questions lies on the Consultants, who must either answer themselves or seek the answers from the project decision makers as well as the final users. Each answer has its own risk grade and each question has a weight factor attached to it (Hall et al., 2006).

As part of the risk management process, the risks which have been detected are graded. This is done based on the experience of the group, working in tandem with the consultants and is a function of two factors, the probability of the risk materializing in the project and its consequences. By using this coefficient, as well as the risk factor of each question, the overall risk can be defined. This coefficient ranges from 0 to 10. The initial factors attached to each question can be altered according to the input from the consultants, decision makers or basic users.

The algorithm is:

$$EK_N = (\Sigma K_{N1} * BK_{N1} + \Sigma K_{N2} * BK_{N2} + \dots + \Sigma K_{Nv} * BK_{Nv})$$

$$EK_{Nmax} = (\Sigma K_{max} * BK_{N1} + \Sigma K_{max} * BK_{N2} + \dots + \Sigma K_{max} * BK_{Nv})$$

$$\Sigma EK = (EK_1/EK_{1max} + EK_2/EK_{2max} + \dots + EK_N/EK_{Nmax}) / N$$

Where:

$\Sigma EK$  = Total Risk Level

$EK$  = Risk Level

$BK$  = Scored Risk (answers to questions- sub-categories) with values

zero  $BK = 0$

medium  $BK = 1$

high  $BK = 2$

$\Sigma$  = Risk coefficient with values from 0 to 10

$N$  = number of categories

$v$  = number of subcategories

**Stage 3:** Defining risk. After the risk assessment, the overall and per category risk level needs to be defined. More specifically, after the data input and solving the algorithm, a

standardized form is filled which shows the risk levels in percentages as well as the overall risk level (in percentage). This shows the risk level according to the answers, ( $EK_N$ ), the maximum risk level according to the selected sub-categories ( $EK_{Nmax}$ ) and finally the risk level in percentage form ( $\Sigma EK * 100\%$ ). Then, the danger levels per category are plotted as column graphs and diagrams in excel form. This allows for a clearer view of the associated risks.

**Stage 4:** Mitigation and Strategies. The next stage in risk management is the mitigation and strategies for dealing with risks. A form has been created which analyzes each danger and at the same time suggests ways of dealing with each specific risk. This form also suggests ways to mitigate risk in specific sub-categories. If the solution proposed is a zero risk one, then no methods are shown. The ways of dealing with risks stem from past experience and the way to formulate them is existent (Buttigieg et al., 2003).

**Stage 5:** Control. These steps are followed by control functions, revision and corrective actions. The project manager should establish methods for measuring how effective the proposed methods for dealing with risk arising during the project implementation actually were. This process also checks for the appearance of new risks, as part of the ongoing process for continuous improvement and lessening of risks. Thus, the appearance of new risks necessitates re-use of this method, something which denotes its usefulness throughout the life span of the entire project.

## **1.2 Contract**

### **Finalizing Planned Processes**

The predesigned processes must be taken as being both checked and finalized, since they are the backbone and the limits of the overall project for implementing the installation of an ERPS. The present methodology considers the Contract as a standardized form which is created and filled in by the legal departments of the corporations, in tandem with the other departments which are involved (accounting, human resources, procurement, management etc). The finalization of the planned processes gives added insurance to the fact that the objectives of the project will be met in a specific time with a specific budget, to the satisfaction of all parties involved.

## **1.3 Implementation**

### **1.3.1 Implementing project planning**

With the completion of the two basic stages put forth by the methodology, the project has been fully defined, the planning and resource allocation has been undertaken, the management of all companies involved has been fully briefed and all parties are bound by signing a contract. Specifically the following have taken place:

- Design of the scope of activities
- Project planning
- Non standard terms and conditions

- Resource Allocation
- Evaluating Cost-Budget
- Hiring and Assigning of Personnel
- Communication Plan and Progress Report
- Risk Management
- Finalization of Planned Processes

### *1.3.2 Management of documents, files and deliverables*

As mentioned in the first stage of the methodology, that of the proposal, during the task analysis, it will be necessary to produce documents, standards, project status reports, as well as processes for delivering them via the use of the communication plan of the project. The documents are divided into categories, and might be deliverables or help texts for a specific text, documents concerning a specific implementation project or documents that are used on all similar projects. These include help files, presentations, contracts, progress reports, test scenarios, manuals, resource allocation briefs, standardized documents and others.

### *1.3.3 Continuous and updated control*

This process is undertaken by the project management throughout the duration of implementing the installation of the ERPS and is directly linked with monitoring the tasks assigned to the Consultants based on the project plan. The goal of this process is to affect the factors which affect changes, in order to insure that such changes are beneficial, to detect the presence of change and manage changes when they appear.

Coordinated change suggested by the present methodology for such projects are:

- Check the changes in the project scope, ie the ERPS modules to be installed, the environment of the client corporation etc.
- Check of changes to the time table – deviations etc.
- Check for changes in cost i.e., increase in expenses.
- Quality control - ERPS, quality of the services provided by the consultants or the deliverables etc.
- Check for changes in the risk level as shown in the methodology for risk management.
- Contract management – deviation from contractual obligations etc.

### *1.3.4 Preview of quality and control*

The project manager uses the process of internal review as it is dictated by the communication plan, to insure constant progress reports about the project, as well as adjustments to the programmed and predetermined limits for implementing the project, as they were defined and analyzed during the design of the project plan during the Proposal stage, in order to avoid unforeseen results and to insure high level of quality in



both the ERPS and the services provided during its installation.

#### **1.3.5 Final Performance reporting**

Performance reporting, deals with collecting and propagating data about performance, aiming to inform the project stakeholders, through the monitoring committee. This process includes:

- Situation Report – describes the current project status.
- Progress Report –describes the work of the project team.
- Forecast – predicts that future status and evolution of the project.

### **1.4 Completion**

#### **1.4.1 Administrative closure**

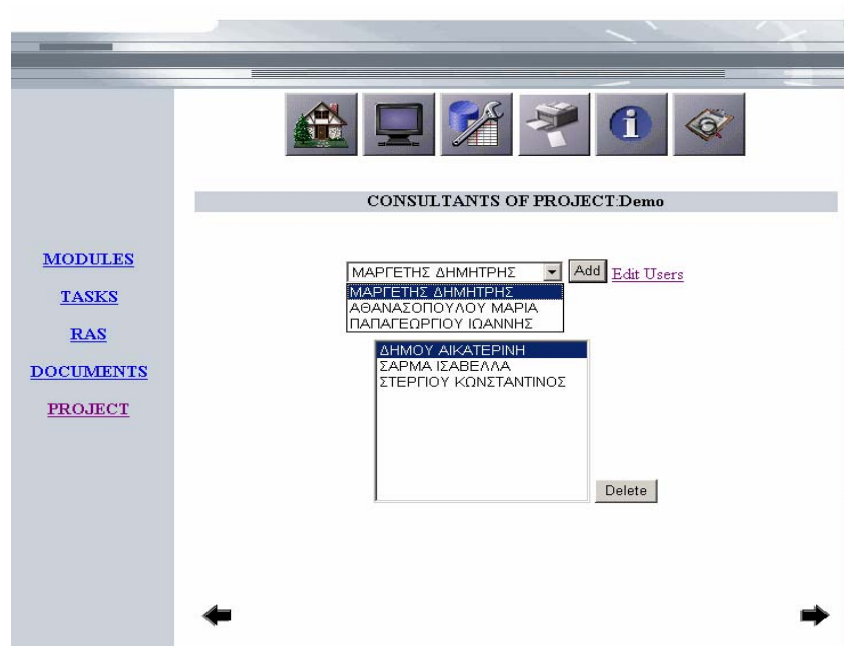
In order for the installation project to achieve its goal, which is to successfully install the ERPS, or to be terminated for various other reasons, completion is required. The aim of the administrative closure is to check and report the results of the project, while at the same time getting the approval of the product from both the sponsor and the client (Kennerley et al., 2001).

#### **1.4.2 Contract Closure**

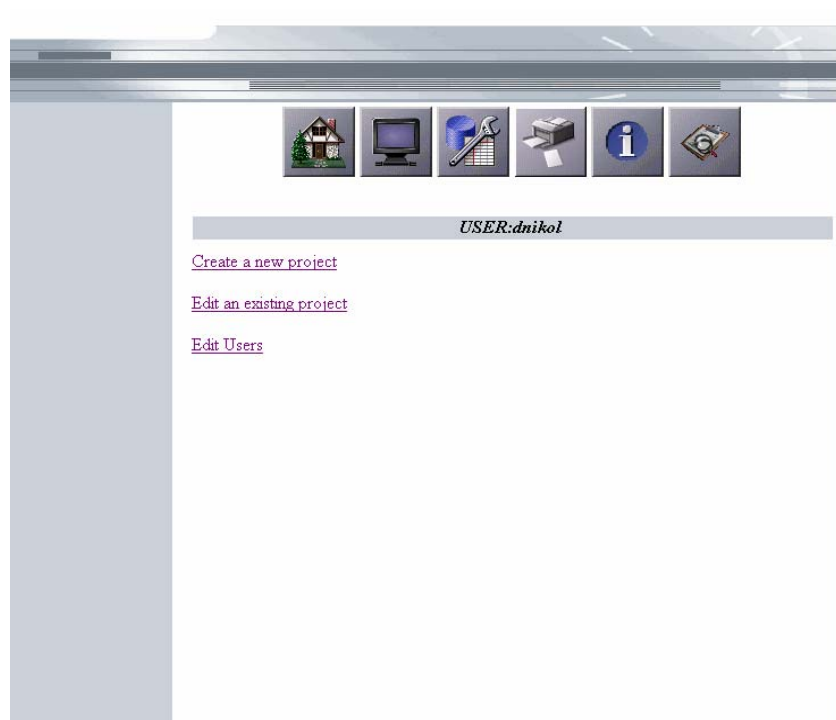
Contract closure is similar to administrative closure since it includes control functions for the ERPS (rechecking that all activities were correctly implemented to a satisfactory level, and that all modules have been installed and are functioning) and the administrative closure (keeps synchronized files which show the final results as well as files with relevant information for future use).

## **2. EVALUATING METHODOLOGY DURING THE PILOT STUDY**

For the evaluation of the MAI methodology a suitable software tool has been created in order to support the user during the analysis, modeling and monitoring of an installation project for an ERP. Below are some indicative screen shots:



**Figure 5:** Screen of allocating consultants to the project



**Figure 6:** Screen of actions available to user (Project Manager)

PROJECT TASK DETAIL	
Name	FI1
Module	FI
Phase	ΕΚΚΙΝΗΣΗ
Consultant	ΔΗΜΟΥ ΑΙΚΑΤΕΡΙΝΗ
Start Date Planned	8/7/2002
End Date Planned	8/7/2002
Start Date Actual	8/7/2002
End Date Actual	8/7/2002
Prior Task	
Tools	
Task Risks	
Resources	
Comments	

Update

Remove from Project

←

**Figure 7:** Screen of project task detail

RM TOOL

CATEGORY

Existing Categories

PROJECT DEFINITION  
PROJECT SIZE  
USER ORGANIZATION  
SPONSORSHIP AND COMMITMENT

Edit Category

PROJECT DEFINITION

New Delete Change Name

SUBCATEGORIES

Existing Subcategories

Project Importance  
Benefits of New System  
Availability of Documentation  
Requirements

Edit Subcategory

New Delete Change Name

[Create a new project](#)  
[Edit an existing project](#)  
[Edit Users](#)

**Figure 8:** Screen of editing categories and subcategories in the Risk Management Tool

The methodology was applied as a pilot application by a major ERPS development company (Singular S.A.) in its ERPS packet “SEn” (Singular Enterprise). In this application, no adjustment was necessary to the existing ERPS of the corporation that was getting the installation. A parametric study of the basic elements and the creation of secondary/help files for the system were required, since this was its first application. During this pilot application it was recorded that the tools provided gave all users the required capabilities. It contributed to the upgrade of the services rendered by the corporation and in work improvement regarding time, organization, facility, capabilities and communications, both of the project managers, as well as the rest of the project team.

The benefits from the utilization of the proposed MAI in regard to the previous state are shown in the following table:

	<b>Before the evaluation of the MAI methodology and its application</b>	<b>After the evaluation of the MAI methodology and its application</b>
Methodology	Use of the internal corporate methodology	Evaluation of the MAI methodology with clear and concise goals and milestones geared towards the result.
	Delays on the implementation of tasks	Capabilities for parallel implementation of tasks while avoiding chain delays and providing the capacity for improvement and redesign of each task independently.
Communication	Lack of communication between the interested parties during the implementation phase	Direct communication between the project manager and the consultants via the internet
	Lack of proper cooperation between the supplying and client corporation	Cooperation through proper coordination and collaboration of the client corporation through full adjustment of the corporate function via the use of ERPS to insure full compliance and compatibilities
Documents	Management of documents not in accordance with crucial dates	Organized document management, accuracy in the dates of signed contracts
Knowledge Storage	The consultants initially used only personal knowledge, and after multiple meetings, the knowledge of their colleagues in the corporation.	The consultants can directly utilize the stored knowledge of any installation that has taken place in the company up to today.

Risk Management	Application of random and dangerous tasks without any redundancies for deviations	Evaluation of the risk management tools, projection of deviation to dates, leading to the capability for creating alternate scenarios
	Danger for extending the duration of the project outside the bounds of time management due to risks being actualized	By identifying and dealing with possible risks, a more realistic time scheduling for the task of the project is achieved, resulting in a framework which has the least possible time demands
	Dealing with problems that might arise during the project that might require additional resources without the capability to acquire them	Via risk management, possible risks are identified and dealt with in a timely fashion before they are actualized. But even if the actualization of these risks is certain, this is something that is expected and becomes part of the programming. This insures the best possible utilization of available resources.
Resources	Internal changes without any consistency in the provider company, as well as the client company, random redistribution of tasks, lack of trust, disorder	Tying down specific resources and delegating specific jurisdictions
Time	Completing the ERPS installation within 1,5 years	Drastic reduction of the installation time for the ERPS to 8 months

**Table 2:** The benefits from the utilization of the MAI methodology

### 3. RESULTS

#### 3.1 General benefits

In general, we can say that the MAI methodology has the following advantages:

- Utilizes basic principles of goal directed project management, starting with the desired target goal and reaching the starting point.
- Provides easy and effective guidance for all installation and analysis stages.
- Provides control and cost reduction for the installation in
  - time
  - manpower
  - technological equipment
  - general resources
- Provides control and risk mitigation for the installation

- Creates the necessary requirements for a stable transition of the corporation to the new organizational and managerial system.
- Redefines the corporate structure, so that it can adjust to the new environment created by the ERPS.
- Provides optimal adaptation of the processes and the structure of the enterprise in the new ERP system.
- Provides important guidance and control of the processes that concern the proper training of the end-users to the ERP system.
- Supports the team in structuring the system and choosing the technical equipment.
- Finally, the presented methodology, due to its generalised nature, can be adopted by any ERP company regardless the demands or particularities of its ERP system.

As we have stated above, the pilot application of the methodology in the ERP package of a large IT company was successful. The application of the methodology contributed to:

- the improvement of work not only for the project manager but also for the whole project team as far as time, organization, roles and responsibilities were concerned
- the proper cooperation between the provider and client company through full adjustment of the corporate functions
- the organization of document management and the accuracy in the dates of signed contracts
- the proper utilization of the stored knowledge for any future installation of the provider - company
- the handling of random and dangerous tasks, with the evaluation of the risk management tools, the projection of deviation to dates and the creation of alternate scenarios
- the confrontation of problems that aroused during the project, via risk management, that identified possible risks and dealt with in a timely fashion way before they were actualized. But even when the actualization of these risks was certain, this was expected and became part of the planning (mitigation strategies).
- the proper allocation of resources by tying down specific resources and delegating specific jurisdictions
- the improvement and re-planning of each task independently and the parallel implementation of tasks avoiding chain delays
- the rapid completion of tasks and the drastic reduction of the installation time for the ERP system

- the full upgrade of the services that the company provides from this point on, since the company's ERP product has been successfully installed by using the MAI methodology.

### **3.2 Benefits for the project administrator**

The changes in the management of the project were obvious in the sectors of planning, organization and control. The project administrator had, with the help of the methodology and its application, an overall picture of the tasks, the time margins and also of the progress of each work both separately and as a whole. He was able to supervise immediately the work of the consultants, while at the same time the methodology contributed to the most optimal allocation of the available personnel. Furthermore, he was able through the guidance committee to communicate with the people in charge and to solve any occurring problems on the spot.

### **3.3 Benefits for the consultants**

The methodology helped the consultants to improve their work concerning the optimization of the parameterization of the ERP system based on the needs of the client-company, the proper integration of units and their interconnection and the fast and accurate execution of the control processes. It also offered them important guidance and control to the efficient training of the main users (key users) of the ERP system.

The methodology contributed to the improvement of the collaboration between the members of the project team, but also between the partners and the customer.

## **4. FUTURE WORK**

The methodology presented in this study is a complete proposal of the management of projects of ERP systems installation. At the same time, it can form the base for the development of more complex applications that will support the present methodology and exploit its benefits.

In the future, it is intended to fully implement the methodology in various projects. The knowledge and experience that will be gained through the application process will be utilized in more upcoming projects. This extensive use will bring to the surface improvements that will make the methodology even more robust and accurate.

Finally, the presented methodology for the installation of its ERP system can help the provider-company draw conclusions for the customers, the ERP system and the degree of utilisation of its individual parts. The company can also evaluate the consultant's, the project manager's and generally the project's team efficiency and estimate the divergences from the time schedule and other various factors, gaining useful knowledge for its marketing and human resource department.

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## APPENDIX A: SUGGESTED TASKS PER PHASE

<b>A. START-UP PHASE</b>	
1.1 DESIGN OF WORK CHART	
<b>ACTIVITY</b>	<ul style="list-style-type: none"> <li>➤ Initialization of project and defining its basic elements.</li> <li>➤ Creation of implementation team and delegation of jurisdictions.</li> <li>➤ Selection of ERPS modules to be included in the project.</li> </ul>
<b>DELIVERABLES</b>	Project Charter
<b>HELP TOOLS &amp; DOCUMENTS</b>	Document outlining client specifications
<b>CRITERIA FOR COMPLETED TASK</b>	Written acceptance of work chart
<b>CLIENT ACTIONS</b>	Check of Project Work Chart
<b>RISKS</b>	Recording erroneous/ incomplete information (client)
<b>B. ANALYSIS PHASE</b>	
2.1 DESIGN OF PERFORMANCE REPORT	
<b>ACTIVITY</b>	The correct analysis of the data/requirements of the corporation based on the document outlining requirements
<b>DELIVERABLES</b>	Design Requirements
<b>HELP TOOLS &amp; DOCUMENTS</b>	Document for requirement specification
<b>CRITERIA FOR COMPLETED TASK</b>	Written acceptance of the Design requirement document.
<b>CLIENT ACTIONS</b>	Check of the Design requirement document.
<b>RISKS:</b>	Recording erroneous/ incomplete information (client)
<b>C. IMPLEMENTATION PHASE</b>	
3.1 APPLICATION ORGANIZATION	
<b>ACTIVITY</b>	The correct interpretation of the requirements for the application based on the Design requirement document.
<b>HELP TOOLS &amp;</b>	Requirement specification document and Design requirement

<b>DOCUMENTS</b>	document
<b>CRITERIA FOR COMPLETED TASK</b>	Registering in the system: ➤ Corporate Structure ➤ Fiscal function organization
<b>CLIENT ACTIONS</b>	Check data application based on the Design requirement document
<b>RISKS</b>	Erroneous performance report and registration document
<b>3.2 DATA STORAGE MANAGEMENT</b>	
<b>ACTIVITY</b>	The correct interpretation of the requirements for the application based on the Design requirement document.
<b>HELP TOOLS &amp; DOCUMENTS</b>	➤ Document for requirement specification ➤ Performance report ➤ Data migration utilities
<b>CRITERIA FOR COMPLETED TASK</b>	The following tasks need to be entered into the system: ➤ Movement of goods ➤ Parameters of goods ➤ Defining characteristics of goods ➤ Packing specifications for goods ➤ Serial Numbers ➤ Codifying good lots ➤ Category of goods ➤ Creation of counters ➤ Creation of types of movements ➤ Definition of view screens ➤ Definition of printout forms
<b>CLIENT ACTIONS</b>	Check application data based on design requirements and the requirement specification document.
<b>RISKS</b>	➤ Errors in design requirement and/or requirement specification document. ➤ Incompatible or incomplete uploading file for goods.
<b>3.3 RECEIPT DOCUMENTS FOR GOODS</b>	
<b>ACTIVITY</b>	The correct input of documents relating to goods data in the application
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	➤ Parameters for receipt of goods in the application ➤ Types of receipts ➤ Three party receipt documents ➤ Surcharges ➤ Design of printout forms

<b>CLIENT ACTIONS</b>	Check application data of the receipt of goods documents with the design requirements and the document with the design specifications
<b>RISKS</b>	Incorrect design requirements (acceptance of document without client overview)
3.4 TRANSFER OF ACCOUNT PLAN	
<b>ACTIVITY</b>	The correct input of account plan data to the financial management
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	Account plan in the application
<b>CLIENT ACTIONS</b>	Check application data for the account plan against the data from the previous application
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Irrational performance report and/or specification document</li> <li>➤ Unable to reproduce downloadable file</li> </ul>
3.5 BUSINESS PARTNERS	
<b>ACTIVITY</b>	The correct transfer of transaction data to the application
<b>HELP TOOLS &amp; DOCUMENTS</b>	<ul style="list-style-type: none"> <li>➤ Functions for data transfers</li> <li>➤ Performance report</li> </ul>
<b>CRITERIA FOR COMPLETED TASK</b>	Transfer of Business partners
<b>CLIENT ACTIONS</b>	Check application data for business partners against the data from the previous application
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Incompatible download file</li> <li>➤ Unable to reproduce downloadable file</li> <li>➤ Manual registration of Business partners in the application</li> </ul>
3.6 CLIENTS	
<b>ACTIVITY</b>	The correct input of client data to the application
<b>HELP TOOLS &amp; DOCUMENTS</b>	<ul style="list-style-type: none"> <li>➤ Data transfer functions</li> <li>➤ Performance report</li> </ul>
<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed and entered into the system:</p> <ul style="list-style-type: none"> <li>➤ Client transfers</li> <li>➤ Creation of counters</li> <li>➤ Types of payments</li> <li>➤ Quittance deals</li> </ul>
<b>CLIENT</b>	Check application data for the clients against the data from the previous

<b>ACTIONS</b>	application
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Incompatible download file</li> <li>➤ Unable to reproduce downloadable file</li> <li>➤ Manual registration of clients</li> </ul>
<b>3.7 SUPPLIERS</b>	
<b>ACTIVITY</b>	The correct input of suppliers data to the application
<b>HELP TOOLS &amp; DOCUMENTS</b>	<ul style="list-style-type: none"> <li>➤ Data transfer functions</li> <li>➤ Performance report</li> </ul>
<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed and entered into the system:</p> <ul style="list-style-type: none"> <li>➤ Transfer of suppliers</li> <li>➤ Creation of counters</li> <li>➤ Types of payments</li> <li>➤ Quittance deals</li> </ul>
<b>CLIENT ACTIONS</b>	Check application data for the suppliers against the data from the previous application
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Incompatible download file</li> <li>➤ Unable to reproduce downloadable file</li> <li>➤ Manual registration of suppliers into application</li> </ul>
<b>3.8 SUPPLY MANAGEMENT</b>	
<b>ACTIVITY</b>	The correct input of supply data to the application
<b>DELIVERABLES</b>	Temporary protocol for accepting the supply management sub-system
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed and entered into the system:</p> <ul style="list-style-type: none"> <li>➤ Parameters of purchase documents</li> <li>➤ Types of purchase documents</li> <li>➤ Standards for documents</li> <li>➤ Surcharges</li> <li>➤ Print forms</li> </ul>
<b>CLIENT ACTIONS</b>	Check application data for the supplies against the data from the performance report
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Irrational performance report</li> <li>➤ Complex document forms</li> <li>➤ Delay in designing these (from client)</li> <li>➤ Examples of such documents not available</li> </ul>
<b>3.9 SALES &amp; DISTRIBUTION</b>	
<b>ACTIVITY</b>	The correct input of sales data to the application
<b>HELP TOOLS &amp;</b>	Performance report

<b>DOCUMENTS</b>	
<b>CRITERIA FOR COMPLETED TASK</b>	The following tasks need to be completed and entered into the system: <ul style="list-style-type: none"> <li>➤ Sales documents</li> <li>➤ Parameters documents</li> <li>➤ Types of documents</li> <li>➤ Standards for documents</li> <li>➤ Surcharges</li> <li>➤ Printout forms for sales documents</li> </ul>
<b>CLIENT ACTIONS</b>	Check application data for sales against the data from the performance report
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Irrational performance report</li> <li>➤ Complex document forms</li> <li>➤ Delay in designing these (from client)</li> <li>➤ Examples of such documents not available</li> </ul>
3.10 SALES FORCE & DISTRIBUTORS MANAGEMENT	
<b>ACTIVITY</b>	The correct input of sales force data to the application
<b>DELIVERABLES</b>	Temporary protocol for accepting the sales force&distribution management sub-system
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	The following tasks need to be completed and entered into the system: <ul style="list-style-type: none"> <li>➤ Creation of counters</li> <li>➤ Creation Transfer types</li> <li>➤ Special distribution zones</li> <li>➤ Distribution scales</li> </ul>
<b>CLIENT ACTIONS</b>	Check application data for the sales force against the data from the performance report and the document for the design specifications
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Irrational registration document</li> <li>➤ Erroneous performance report</li> <li>➤ First attempt at sales force management (sales policy, etc.)</li> </ul>
3.11 GOODS INVOICING	
<b>ACTIVITY</b>	The correct input of invoice data to the application
<b>DELIVERABLES</b>	Temporary protocol for accepting the warehouse management sub-system
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	The following tasks need to be completed and entered into the system: <ul style="list-style-type: none"> <li>➤ Goods pricing</li> <li>➤ Discount zones</li> </ul>

	➤ Provider policies
<b>CLIENT ACTIONS</b>	Check application data for invoices against the data from the performance report
<b>RISKS</b>	➤ Unorthodox performance report ➤ Pricing not available ➤ Trade policy not available
3.12 PRICING	
<b>ACTIVITY</b>	The correct input of pricing data to the application
<b>DELIVERABLES</b>	Temporary protocol for accepting the pricing sub-system
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	The following tasks need to be completed and entered into the system: ➤ Types of expenses ➤ Types of products ➤ Pricing Parameters ➤ Pricing Periods
<b>CLIENT ACTIONS</b>	Check application data for pricing against the data from the performance report
<b>RISKS</b>	➤ Unorthodox performance report ➤ No available technical specifications (first pricing)
3.13 MARKETABLE SECURITIES	
<b>ACTIVITY</b>	The correct input of marketable securities data to the application
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	The following tasks need to be completed and entered into the system: ➤ Types of securities ➤ List of securities ➤ Transfer types
<b>CLIENT ACTIONS</b>	Check application data for the marketable securities against the data from the older application
<b>RISKS</b>	Unorthodox requirement specification document& performance report Initial design
3.14 FISCAL/FINANCIAL DOCUMENTS	
<b>ACTIVITY</b>	The correct input of fiscal/financial document data to the application
<b>HELP TOOLS &amp;</b>	Performance report

<b>DOCUMENTS</b>	
<b>CRITERIA FOR COMPLETED TASK</b>	The following tasks need to be completed and entered into the system: <ul style="list-style-type: none"> <li>➤ Parameters of fiscal/financial documents</li> <li>➤ Types of fiscal/financial documents</li> <li>➤ Fiscal/financial documents standards</li> <li>➤ Print forms for fiscal/financial documents</li> </ul>
<b>CLIENT ACTIONS</b>	Check application data for the fiscal/financial documents against the performance report
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Unorthodox performance report</li> <li>➤ Non available types of fiscal/financial documents</li> </ul>
3.15 FINANCIAL & COST ACCOUNTING	
<b>ACTIVITY</b>	The correct input of accounting data to the application
<b>HELP TOOLS &amp; DOCUMENTS</b>	<ul style="list-style-type: none"> <li>➤ Import tools</li> <li>➤ Performance report</li> </ul>
<b>CRITERIA FOR COMPLETED TASK</b>	The following tasks need to be completed into the system: <ul style="list-style-type: none"> <li>➤ Accounting parameters</li> <li>➤ Account serial numbers</li> <li>➤ Creation of counters</li> <li>➤ Accounting Instructions</li> <li>➤ Types of articles</li> <li>➤ View screens</li> <li>➤ Print forms</li> <li>➤ Design of printout forms for financial articles</li> </ul>
<b>CLIENT ACTIONS</b>	Check application data for accounting against the data from the previous application
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Unorthodox performance report</li> <li>➤ File not available for download</li> <li>➤ Unable to reproduce downloadable file</li> <li>➤ Manual registration of account plan</li> </ul>
3.16 DOCUMENT TRANSFERS	
<b>ACTIVITY</b>	The correct input of sales management data into the fiscal management.
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	The following tasks need to be completed and entered into the system: <ul style="list-style-type: none"> <li>➤ Transfer articles</li> <li>➤ Document transfer procedures</li> </ul>
<b>CLIENT ACTIONS</b>	Check application data for accounting against the performance report and the previous system, and perform a check against the results from the account transfers.

<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Irrational performance report and/or design requirement document</li> <li>➤ No control of results (transfer to accounting)</li> </ul>
<b>3.17 ACCOUNT TRANSFERS</b>	
<b>ACTIVITY</b>	The correct data transfer from general to detailed accounting.
<b>DELIVERABLES</b>	Temporary protocol for accepting the fiscal management sub-system.
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed and entered into the system:</p> <ul style="list-style-type: none"> <li>➤ Bank transfer sheets</li> <li>➤ Transferable accounts</li> <li>➤ Functions for account transfers</li> </ul>
<b>CLIENT ACTIONS</b>	Check application data for accounting against the performance report and against the old computerized process, as well as the audit for the results of the account transfers.
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Unorthodox performance report &amp; requirement specification document</li> <li>➤ Bank transfer sheets unavailable</li> <li>➤ Non-existent cost centers</li> <li>➤ First obligatory introduction of detailed accounting</li> <li>➤ Incomplete knowledge of detailed accounting</li> </ul>
<b>3.18 FIXED ASSETS MANAGEMENT</b>	
<b>ACTIVITY</b>	The correct input of fixed assets data to the application
<b>DELIVERABLES</b>	Temporary protocol for accepting the fixed assets sub-system
<b>ΒΟΗΘΗΤΙΚΑ ΕΝΤΥΠΑ &amp; ΕΡΓΑΛΕΙΑ</b>	<ul style="list-style-type: none"> <li>➤ Performance report</li> <li>➤ Functions for data input</li> </ul>
<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed and entered into the system:</p> <ul style="list-style-type: none"> <li>➤ Parameters</li> <li>➤ Amortization factors</li> <li>➤ Areas where fixed assets are installed</li> <li>➤ Types of ownership</li> <li>➤ Counters</li> <li>➤ Transfer types</li> <li>➤ Transfer of fixed assets</li> <li>➤ Display screens</li> <li>➤ Printing options</li> <li>➤ Documents for fixed assets</li> <li>➤ Transfer of fixed asset documents</li> </ul>
<b>CLIENT ACTIONS</b>	Check application data for fixed assets against the performance report and the previous system, and perform a check against the results from



	the account transfers.
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Irrational performance report &amp; specification document</li> <li>➤ No computer records of fixed assets</li> <li>➤ Inability to create download file</li> </ul>
<b>3.19 WAREHOUSE LOGISTICS – GEOGRAPHY</b>	
<b>ACTIVITY</b>	The definition of the set up parameters for the warehouse location, in order for the design of the physical location by the client to be viable.
	The implementation of the functions/procedures of the warehouse is based on the geography of the warehouses, according to the specifications of the performance report.
<b>HELP TOOLS &amp; DOCUMENTS</b>	<ul style="list-style-type: none"> <li>➤ Tool for designing the physical locations for the ERPS installation (if it exists)</li> <li>➤ Warehouse plan view</li> <li>➤ Design specification document</li> <li>➤ Performance report</li> </ul>
<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed and entered into the system:</p> <ul style="list-style-type: none"> <li>➤ Logistics Parameters (type of code for warehouse location, etc)</li> <li>➤ Warehouse geography <ul style="list-style-type: none"> <li>○ Types of positions</li> <li>○ Warehouse characteristics</li> <li>○ Warehouse zones</li> <li>○ Design of the physical location – parameterization of warehouse locations</li> <li>○ Input of warehouse locations</li> </ul> </li> </ul>
<b>CLIENT ACTIONS</b>	<ul style="list-style-type: none"> <li>➤ Design of Physical Location &amp; Installation of storage spaces</li> <li>➤ Check of storage spaces</li> <li>➤ Registering Logistics characteristics associated with goods (Sorting positions, point and quantity of resupply, storage characteristics, etc).</li> </ul>
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Incomplete knowledge of the warehouse geography</li> <li>➤ Incomplete data for the warehouse geography (ie packaging, capacity, stacking etc)</li> <li>➤ Changes of the warehouse geography</li> <li>➤ Changes in the packaging standards of the goods.</li> <li>➤ Erroneous logistic characteristic of the goods.</li> <li>➤ Insufficient performance report and specification document.</li> </ul>
<b>3.20 WAREHOUSE LOGISTICS – MANAGEMENT</b>	
<b>ACTIVITY</b>	The implementation of the functions/procedures of the warehouse, in accordance to the performance report.
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report

<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed and entered into the system:</p> <ul style="list-style-type: none"> <li>➤ Types of functions</li> <li>➤ Methods for implementing functions</li> <li>➤ Stock description</li> <li>➤ Types of goods documents that are used to update the content of the warehouse.</li> <li>➤ Warehouse functions</li> <li>➤ Warehouse Procedures</li> </ul>
<b>CLIENT ACTIONS</b>	<p>Registering logistic characteristic of the goods (Functions).  Check the functions/procedures of the warehouses, in relation to the performance report and compare the results in relation to the actual function of the warehouse.  Check the qualitative characteristics of the goods (packaging standards, serial numbers and lots).  Check the management of goods in relation to their logistic characteristics.</p>
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Insufficient performance report.</li> <li>➤ Incomplete knowledge of the warehouse function.</li> <li>➤ Changes in the warehouse geography.</li> <li>➤ Erroneous logistic characteristic of the goods.</li> <li>➤ Changes in standards used for packaging goods.</li> <li>➤ Changes in the parameters for implementing the warehouse functions (method for executing the functions, allowable types of positions, packaging characteristics, allowable characteristics of stock).</li> </ul>
<b>3.21 WAREHOUSE LOGISTICS – CONNECTION TO RETAIL</b>	
<b>ACTIVITY</b>	Connecting warehouse orders with the documents of retail management, according to what has been agreed in the performance report.
<b>DELIVERABLES</b>	Temporary protocol for accepting the logistics sub-system
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed and entered into the system:</p> <ul style="list-style-type: none"> <li>➤ Connecting documents sales/purchases/goods to warehouse logistic commands.</li> </ul>
<b>CLIENT ACTIONS</b>	Check the connection of the various sub-systems with the logistics, as well as the information flow.
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Inadequate performance report.</li> <li>➤ Lack of the required documents concerning sales /purchases / goods in order to connect with logistics.</li> <li>➤ Changes in the update functions for the types counters (Accounting and Logistic Balance).</li> <li>➤ Vague definition of warehouse lot management.</li> </ul>

	➤ Incomplete knowledge of the procedure for connecting the retail to the logistics process
3.22 WIRELESS MANAGEMENT	
<b>ACTIVITY</b>	The detailed definition of procedures/functions for storage which will be made via wireless terminals.
<b>DELIVERABLES</b>	Temporary protocol for accepting wireless terminals.
<b>CRITERIA FOR COMPLETED TASK</b>	The following tasks need to be completed and entered into the system: <ul style="list-style-type: none"> <li>➤ Terminals</li> <li>➤ Terminal users</li> <li>➤ Methods for processing commands set towards wireless terminals</li> <li>➤ Type of storage resources</li> <li>➤ Storage resources</li> <li>➤ Connecting various type of movement of goods with methods for removing/placement via wireless terminals</li> </ul>
<b>CLIENT ACTIONS</b>	Check the warehouse procedures, which will be performed via wireless terminals, in relation to the determined methods of executing commands in the wireless terminals.
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Incomplete knowledge of warehouse procedures.</li> <li>➤ Vague methods for implementing commands to wireless terminals.</li> </ul>
3.23 3 <sup>RD</sup> PARTY LOGISTICS	
<b>ACTIVITY</b>	Parameterization of the service contract agreements.
<b>DELIVERABLES</b>	Temporary protocol for accepting the 3 <sup>rd</sup> party logistics sub-system
<b>HELP TOOLS &amp; DOCUMENTS</b>	Service contract agreements.
<b>CRITERIA FOR COMPLETED TASK</b>	The following tasks need to be completed and entered into the system: <ul style="list-style-type: none"> <li>➤ Parameters</li> <li>➤ Fees charged for services</li> <li>➤ Distribution zones</li> <li>➤ Types of charges for services</li> <li>➤ Services</li> <li>➤ General pricing list for services</li> <li>➤ Contracts for providing services</li> </ul>
<b>CLIENT ACTIONS</b>	<p>Implementation for the total number of Service contract agreements.</p> <p>Check the invoices against the logistics movements</p>

<b>RISKS</b>	<p>Incomplete knowledge of the service contract agreements.</p> <p>Incomplete knowledge of the warehouse procedures and the resulting fees.</p> <p>Incomplete definition of the parameters for charging services (i.e., weight, bulk, monetary value etc) on the packaging of the goods.</p> <p>No available commercial parameters (i.e., categorization of those supplied per supply zone).</p>
<b>3.24 MANUFACTURE PROCESS MANAGEMENT</b>	
<b>ACTIVITY</b>	Implementation of functions/procedures of production, according to the performance report
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed and entered into the system:</p> <ul style="list-style-type: none"> <li>➤ Types of functions</li> <li>➤ Methods for implementing functions</li> <li>➤ Definition of goods data</li> <li>➤ Technical specifications for goods</li> </ul>
<b>CLIENT ACTIONS</b>	<p>Check data application data for production against those of previous application (if such data existed)</p> <p>Check the functions/procedures for production, against the performance report and compare the results against actual data from the production function</p>
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Incompatible download file</li> <li>➤ Unable to reproduce the downloadable file</li> <li>➤ Manual registration data</li> </ul>
<b>3.25 CONNECTION OF MANUFACTURE PROCESS TO WAREHOUSES-LOGISTICS</b>	
<b>ACTIVITY</b>	The connection of manufacturing orders with those types of goods documents used to update the warehouse inventory, according to what has been stated in the performance report
<b>DELIVERABLES</b>	Temporary protocol for accepting the manufacture process management sub-system
<b>HELP TOOLS &amp; DOCUMENTS</b>	Performance report
<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed and entered into the system:</p> <p>Connecting commands – procedures for manufacture with goods storage documents</p>
<b>CLIENT ACTIONS</b>	<ul style="list-style-type: none"> <li>➤ Check the connection of the various sub-systems with the manufacture process and the flow of information</li> </ul>

<b>RISKS</b>	<ol style="list-style-type: none"> <li>1. Insufficient performance report</li> <li>2. The required documents on goods, in order to make the connection, might not exist</li> <li>3. Changes in the method for updating the types counters</li> <li>4. Vague definition of manufacturing management</li> <li>5. Incomplete knowledge of the procedure for connecting the manufacture to the logistics process</li> </ol>
<b>1 PROJECT ROLLOUT PHASE</b>	
4.1 TRAINING	
<b>ACTIVITY</b>	Training of final users of the ERPS by key users
<b>HELP TOOLS &amp; DOCUMENTS</b>	ERPS Installation Manual, Presentations, Seminars
<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed:</p> <ul style="list-style-type: none"> <li>➤ end user training in financial management</li> <li>➤ end user training in commercial management</li> <li>➤ end user training in manufacturing</li> <li>➤ end user training in supply chains</li> </ul>
<b>CLIENT ACTIONS</b>	<ul style="list-style-type: none"> <li>➤ Providing personnel manager and taking attendance</li> </ul>
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Lack in personnel</li> <li>➤ Lack in personnel skill sets</li> <li>➤ Inability to keep attendance</li> </ul>
4.2 PHYSICAL INVENTORY	
<b>ACTIVITY</b>	The registration of the physical inventory quantitatively into the system, with details per warehouse location, and according to the logistic parameters of the goods (packaging, batches, lots, etc).
<b>CRITERIA FOR COMPLETED TASK</b>	<p>The following tasks need to be completed and entered into the system:</p> <ul style="list-style-type: none"> <li>➤ Types of documents for goods inventory</li> </ul>
<b>CLIENT ACTIONS</b>	<ul style="list-style-type: none"> <li>➤ Registering Inventory Documents .</li> <li>➤ Check storage contents in the ERPS, after inventory checking has been finalized</li> </ul>
<b>RISKS</b>	<ul style="list-style-type: none"> <li>➤ Incomplete /incorrect physical inventory</li> <li>➤ Changes in warehouse geography.</li> <li>➤ Incomplete/incorrect logistic parameters for goods (packaging, stock, etc)</li> <li>➤ Incomplete data for storage areas (capacities, etc)</li> </ul>

## APPENDIX B: TIME SCHEDULING FOR SUGGESTED TASKS

